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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,032	06/30/2003	Toshio Tsukakoshi	239720US90CONT	7562

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EXAMINER

STOCK JR, GORDON J

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,032

Applicant(s)

TSUKAKOSHI, TOSHIO

Examiner

Gordon J Stock

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-93 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19, 27-34, 36, 43-48, 50-52, 64-80, 82, 83, 85-89 and 91-93 is/are allowed.
- 6) ☒ Claim(s) 20-22, 25, 26, 35, 37-39, 42, 49, 53-57, 63, 81, 84 and 90 is/are rejected.
- 7) ☒ Claim(s) 23, 24, 40, 41 and 58-62 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification and Drawings

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 35, 42, 49, 53, 63, 81, 84, 90** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. **Claims 35, 42, 81, 84, and 90** provide for the use of said exposure apparatus, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 35, 42, 81, 84, and 90 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Art Unit: 2877

5. As for **claims 49, 53, and 63**, the phrase "can be" renders the claim indefinite, for it is unclear if the limitations following "can be" has to be part of the claimed invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 20-22, 25, 26, 37-39, 42, 49, 53, 63** are rejected under 35 U.S.C. 102(b) as being anticipated by **Sugaya et al. (5,754,299)**.

As for **claims 20-22, 25, 26, 37-39, and 42**, Sugaya in an inspection/exposure apparatus discloses the following: an obtaining process in which at least one image forming characteristic of projection system is obtained, by obtaining information on light via said projection optical system at one measurement point in a field of optical system; deciding process in which a targeted adjustment amount of specific optical element is decided by computation between characteristic obtained, parameters, and a targeted adjustment amount with relation between adjustment and change in image forming characteristic; many parameters are obtained and thereby some are obtained prior to a defined image forming characteristic; many image forming characteristics are obtained such as symmetric vs. asymmetric characteristics with a targeted adjustment amount; with an adjusting process and a transferring process (Figs 3-6; 9-11).

Sugaya discloses an exposure apparatus with a projection optical system comprising a plurality of optical elements with several adjustable optics; a storage unit; measuring unit; computing unit; adjusting unit (Fig. 19 or 13) with exposure being performed by device (Fig. 20). Refer to

Art Unit: 2877

columns 15-20 for determination of symmetric and asymmetric aberrations and subsequent adjustment of optical system.

As for an information storage medium of **claims 49, 53, and 63**, Sugaya discloses a table within the main control system (Fig. 19: 154).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 54-57** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugaya et al. (5,754,299)**.

As for **claims 54-57**, Sugaya discloses the following in an inspection and exposure apparatus: a calculating process in which a targeted adjustment amount is calculated in response to a measurement data of image forming characteristics using a relation expression between said actual measurement data input, parameters, and an adjustment amount with displaying processing by a table in the main control system and by graphical displays of data accumulated; and an adjustment amount (Figs. 3-6, 9-11, 13, and 19; cols. 15-20 for determination of symmetric and asymmetric aberrations and subsequent adjustment of optical system). As for a program for doing these processes, Sugaya is silent. However, the main control system of Fig. 19 is coupled to all systems: adjustment mechanisms, calculator, and a display, tables and graphical displays. Software programs are well known in the art for coordinating and controlling system function. Therefore, it would be obvious to one skilled in the art that the system

Art Unit: 2877

comprised a program that comprised a calculating, displaying, and adjusting procedure for the main control system governs a calculating process by the main control system, a displaying process by the table and graphical display, and adjustment process by the adjustment mechanisms.

Allowable Subject Matter

10. **Claims 1-19, 27-34, 36, 43-48, 50-52, 64-80, 82, 83, 85-89, 91-93** allowed.
11. **Claims 23, 24, 40, 41, 58-62** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. **Claim 35, 81, 84, 90** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As to **claim 1**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an image forming characteristics method the particular calculating process, in combination with the rest of the limitations of **claims 1-19**.

As to **claim 23**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an image forming characteristic method "said image forming characteristic is a wavefront aberration expressed in a Zernike polynomial," in combination with the rest of the limitations of **claims 23-24**.

As to **claim 27**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the particular first computing unit, in combination with the rest of the limitations of **claims 27-36**,

As to **claim 43**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a program that makes a control computer of an exposure apparatus execute a predetermined process the particular condition setting procedure, in combination with the rest of the limitations of **claims 43-48**.

As to **claim 50**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a program that makes a control computer execute a process the particular procedure of calculating a targeted image forming characteristic, in combination with the rest of the limitations of **claims 50-52**.

As to **claim 58**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a program that makes a control computer of an exposure apparatus execute a predetermined process "said image forming characteristic is a wavefront aberration expressed in a Zernike polynomial," in combination with the rest of the limitations of **claims 58-59**.

As to **claim 60**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a program that makes a control computer of an exposure apparatus execute a predetermined process the particular condition setting procedure, in combination with the rest of the limitations of **claims 60-62**.

As to **claim 64**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an image forming characteristics adjusting method the particular adjusting by a driving an optical element based on data of relation between an adjustment amount of said optical element and a change in coefficients of each term in a Zernike polynomial," in combination with the rest of the limitations of **claims 64-66**.

As to **claim 67**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure method the particular calculating process, in combination with the rest of the limitations of **claims 67-72**.

As to **claim 73**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the particular computing unit, in combination with the rest of the limitations of **claims 73-81**.

As to **claim 82**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the particular storage and adjusting unit, in combination with the rest of the limitations of **claims 82-84**.

As to **claim 85**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the computing unit, in combination with the rest of the limitations of **claims 85-90**.

As to **claim 91**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a program that makes computer execute a predetermined process the particular measuring and adjusting procedures, in combination with the rest of the limitations of **claim 91**.

As to **claim 92**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a program that makes computer execute a predetermined process the particular measuring and calculating procedures, in combination with the rest of the limitations of **claim 92**.

As to **claim 93**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a program that makes computer execute a predetermined process the particular obtaining procedure, in combination with the rest of the limitations of **claim 93**.

Art Unit: 2877

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

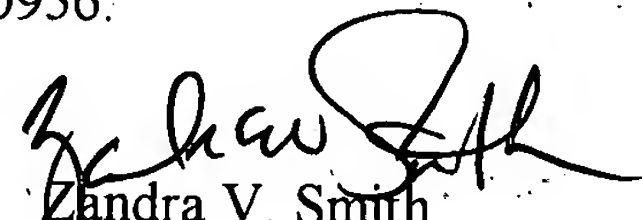
Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


gs

May 17, 2004


Zandra V. Smith
Primary Examiner
Art Unit 2877